250

General Science, Space, and Technology

Budget function 250 includes funding for the National Science Foundation, more than 90 percent of the spending of the National Aeronautics and Space Administration, and funding for general science research by the Department of Energy. In 2000, CBO estimates, outlays for function 250 will total about $18.5 billion. For the past 10 years, the trend in spending for the function has generally been upward.

Federal Spending, Fiscal Years 1990-2000 (In billions of dollars)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Estimate 2000
Budget Authority (Discretionary)	14.5	16.5	17.3	17.2	17.6	16.7	16.7	16.6	18.0	18.8	19.1
Outlays											
Discretionary	14.4	16.1	16.4	17.0	16.2	16.7	16.7	17.1	18.2	18.1	18.4
Mandatory	0	0	0	0	0	0	0	0	0	0	0.1
Total	14.4	16.1	16.4	17.0	16.2	16.7	16.7	17.2	18.2	18.1	18.5
Memorandum:											
Annual Percentage Change in Discretionary Outlays		11.6	1.8	3.9	-4.9	3.2	-0.1	2.8	6.0	-0.5	1.8

250-01 Cancel the International Space Station Program

	Savings (Millions of dollars)	
	Budget Authority	Outlays
Relative to WODI		
2001	1,323	913
2002	2,323	1,987
2003	2,323	2,303
2004	2,323	2,323
2005	2,323	2,323
2001-2005	10,615	9,849
2001-2010	22,230	21,464
Relative to WIDI		
2001	1,345	928
2002	2,400	2,046
2003	2,441	2,407
2004	2,483	2,469
2005	2,525	2,511
2001-2005	11,194	10,361
2001-2010	24,475	23,569

SPENDING CATEGORY:

Discretionary

RELATED CBO PUBLICATION:

Reinventing NASA (Study), March 1994.

The first two elements of the international space station were launched and joined in late 1998. The launch of a third element using a Russian Proton rocket has been delayed pending the investigation of an October 1999 failure of that launcher. The space shuttle has also encountered delays recently, suggesting that the completion date currently planned for the facility—2005— could be at risk. By that time, an estimated $25 billion will have been spent to develop, build, and assemble the space station. The General Accounting Office (GAO) estimates that the life-cycle cost of the entire project, including operation, maintenance, and transportation to and from orbit, will be over $95 billion. The Congress's yearly decision about whether to continue funding for the program hinges not on the money already spent but on whether the program's benefits are sufficient to justify spending an additional $70 billion through 2013.

People who would cancel the international space station program assert that its benefits are unlikely to justify additional spending and that costs are likely to increase above those estimated by GAO. To support their position, critics cite the general lack of enthusiasm for the space station among individual scientists and scientific societies. The program's opponents also note that the costs of the program have continually increased, although its capabilities and scope have decreased. Critics point as well to the uncertainty surrounding the costs of operating and supporting the facility once it has been developed and launched. Regarding that issue, opponents are skeptical of the National Aeronautics and Space Administration's assurance that the station's operating costs will be low, noting that the agency made similar claims about the space shuttle that proved overly optimistic.

Advocates of continued spending for the space station reject critics' claim that the program's benefits do not sufficiently justify its costs. Supporters place a high value on the role of the station as a stepping-stone to future human exploration of the solar system. They also contend that the program will deliver both scientific advances and perhaps even commercial benefits. Supporters further argue that Russia's participation has strengthened the foreign policy reason for continuing the program. They assert that drawing Russia, and particularly its aerospace industry, into a cooperative venture will help to stabilize the Russian economy and provide incentives for Russia to adhere to international agreements on the spread of missile technology. Advocates also point out that the project's cancellation would force the United States to renege on agreements signed with European nations, Japan, and Canada. That could hurt the prospects for future international cooperative agreements on space, science, and other areas of mutual interest.

250-02 Eliminate the Experimental Program to Stimulate Competitive Research

	Savings (Millions of dollars)	
	Budget Authority	Outlays
Relative to WODI		
2001	122	37
2002	152	101
2003	152	133
2004	152	143
2005	152	148
2001-2005	730	562
2001-2010	1,490	1,322
Relative to WIDI		
2001	124	37
2002	157	103
2003	160	137
2004	163	151
2005	166	159
2001-2005	770	587
2001-2010	1,640	1,442

SPENDING CATEGORY:

Discretionary

The Experimental Program to Stimulate Competitive Research (EPSCoR), a partnership between states and several research-oriented federal agencies, was designed to encourage more investment by states in science and technology. EPSCoR was created in response to a concentrated distribution among the states of federal research and development (R&D) funding: a large number of states receive little funding. Currently, federal agencies spend about $113 million on EPSCoR.

Eighteen states and the Commonwealth of Puerto Rico currently take part in EPSCoR. Between 1980 and 1998, the National Science Foundation provided roughly $270 million to more than 60 colleges, universities, and laboratories that had not received significant federal R&D funding in the past. State governments, local industry, and other nonfederal sources provided an additional $300 million to those institutions. The entire effort has supported 2,000 scientists and engineers.

Opponents of EPSCoR contend that the nation must make optimal use of its limited research dollars. That principle would argue for supporting researchers whose proposals are judged superior through a process of peer review, without regard to geographical distribution. Furthermore, critics doubt whether newcomers to the research enterprise can sustain a top-level effort, which requires substantial ongoing investments by the states and regional institutions. Even with matching funds from the states and other nonfederal organizations, novice research institutions might find it difficult to succeed.

Critics also argue that EPSCoR was supposed to be an experimental program, not a permanent source of R&D support for selected states. They note that after nearly 15 years of EPSCoR support, the program's recipients continue to attract only about 8 percent of the federal funding for academic R&D. Opponents point to the corresponding lack of improvement in state shares of such funding: participating states that began the 1980s in the bottom half of the national rankings were still in the bottom half in 1998.

Advocates maintain that EPSCoR promotes a more equitable geographic distribution of the nation's science and technology base. They assert that state policymakers invest more in R&D than they would without EPSCoR's incentives and those investments promote equity in higher education by giving students in those states the research experience and training necessary for careers in scientific fields. Proponents also contend that the program fosters technology-related industries in the states by involving local firms in selecting research topics. Supporters note that 15 of the EPSCoR states experienced above-average growth in federal funding for academic R&D over the 1990-1998 period. They claim that the EPSCoR states have improved their rankings in their chosen "niche" fields, even if such changes are not apparent in the overall statistics. They argue as well that the quality of EPSCoR-funded research is equivalent to other federally funded R&D because awards are based on merit reviews.